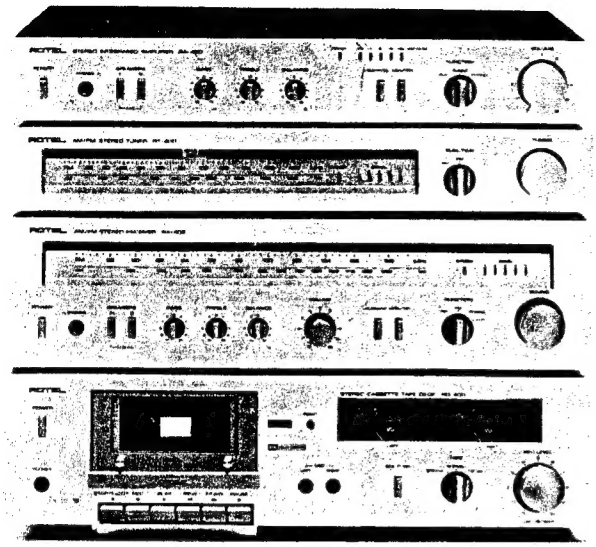
Quality Uncompromised

ROTEL®

Technical Manual



AM/FM STEREO RECEIVER

RX-400

MW/LW/FM STEREO RECEIVER

RX-400L

TABLE OF CONTENTS

Chassis Layout 2
AM IF and RF Alignment/Signal Indicator Calibration 3
Power Amplifier Bias Adjustment 3
FM IF and RF Alignment/Signal Indicator Calibration 4
FM MPX Alignment 4
Repair Parts List 9
Gain Diagram 10
Dial Stringing Diagram 10
Disassembly Diagram 11
Schematic Diagram 13
Wiring Diagram 15

INHALTSVERZICHMIS

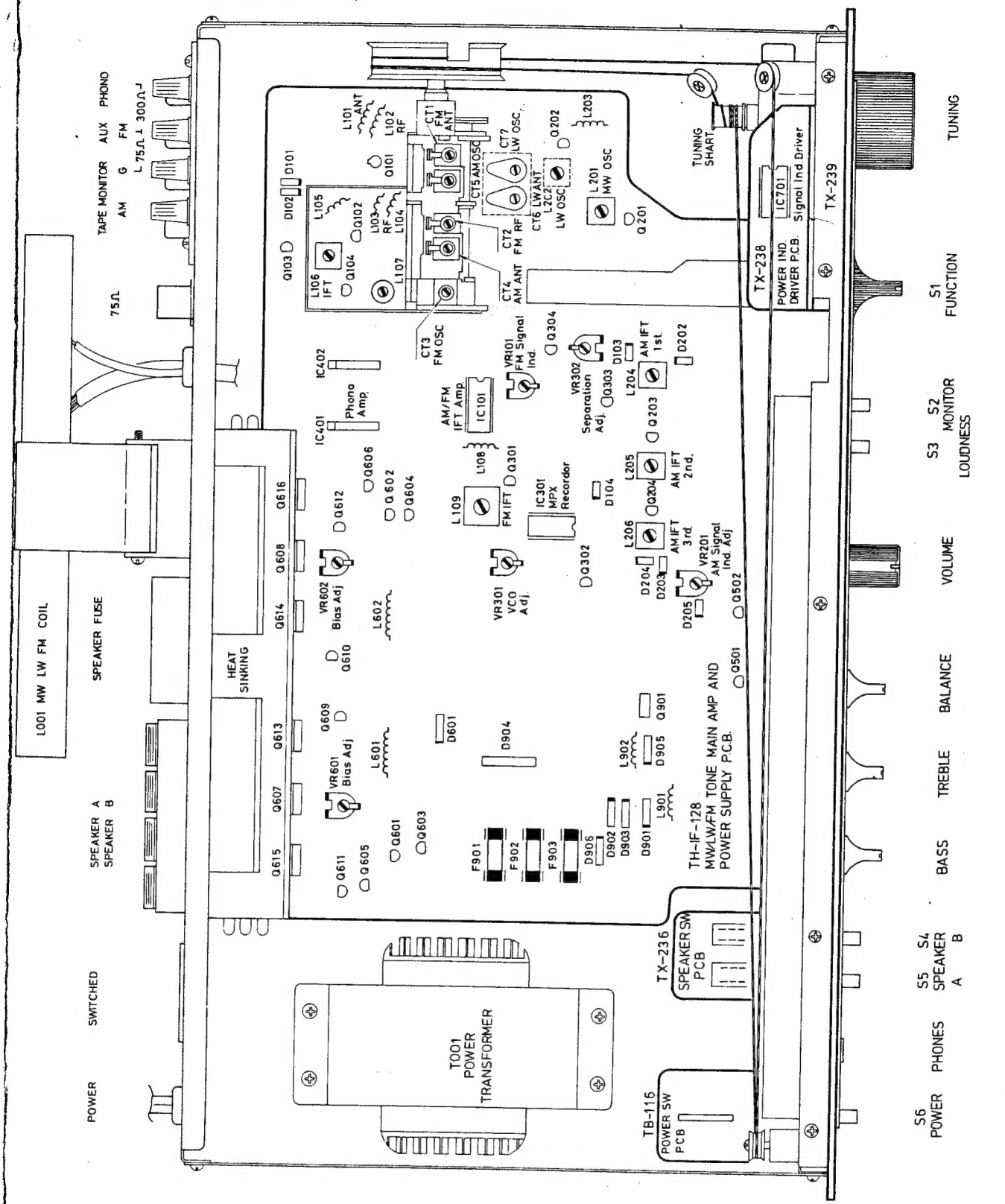
Chassis-Anordnung 2
MW-ZF und HF-Einstellung/Signalstärkeanzeige-Eichung . . . 5
Endverstärker-Vorspannungs-Einstellung 5
UKW-ZF und HF-Einstellung/Signalstärkeanzeige-Eichung . . 6
UKW-MPX-Einstellung 6
Reparatureillistee 9
Verstärkungsdiagramm 10
Skalenantriebsschema 10
Illustration des Auseinaderbaus 11
Schaltungsschema 13
Drahtleitung Diagramm 15

TABLE DES MATIERES

Installation du châssis 2
Alignement AM IF et HF/Indicateur de nivean de signal . . . 7
Réglage de la polarisation de l'amplificateur de puissance . . . 7
Alignement FM IF et HF/Indicateur de force du signal 8
Alignement FM MPX 8
Liste des pièces de rechange 9
Diagramme de gain 10
Diagramme des cables d'entraînement 10
Schema de démontage 11
Diagramme de schématique 13
Diagramme de connexion 15

THE ROTEL CO., LTD. 1-36-8 OHOKAYAMA, MEGURO-KU, TOKYO 152, JAPAN
ROTEL ELECTRONICS CO., LTD. 2ND FLOOR, EVERGLORY BLDG., NO. 305, SECTION 3, NANKING E. ROAD, TAIPEI, TAIWAN, REPUBLIC OF CHINA
ROTEL OF AMERICA, INC. 13518 SO. NORMANDIE, GARDENA, CALIF. 90249, U.S.A.
ROTEL HI FI LIMITED. 2-4 ERICA ROAD, STACEY BUSHES, MILTON KEYNES, BUCKINGHAMSHIRE, ENGLAND

Chassis Layout/Chassis Anordnung/ Installation de Châssis



AM IF and RF Alignment/ Signal Indicator Calibration

Instruments: AM Signal Generator (400Hz 30% Modulated), AC VTVM and Oscilloscope.

AM IF Alignment (AM/FM, MW/LW/FM)

Step	Generator		Tuning Dial setting	Adjust	Adjust for
	Coupling	Frequency			
1	Pin No.12 (on IF board through a 0.01 mfd Capacitor)	455KHz	No interfering at low end of scale	L204, L205 and L206 (on IF board)	Maximum reading on AC VTVM.

MW RF Alignment (AM/FM, MW/LW/FM)

Step	Generator		Tuning Dial setting	Adjust	Adjust for
	Coupling	Frequency			
1	Test Loop Radiate signal into ferrite loop-stick antenna.	600KHz	600KHz	L201 (OSC) and L001 (ANT) lead line side	Maximum reading on AC VTVM.
2		1400KHz	1400KHz	CT5 (OSC) and CT4 (ANT)	
3	(Input 100mV)	1000KHz	1000KHz	VR201	5 LEDs just light up. (Signal strength indicator.)

LW RF Alignment (MW/LW/FM only)

Step	Generator		Tuning Dial setting	Adjust	Adjust for
	Coupling	Frequency			
1	Test Loop Radiate signal into ferrite loop-stick antenna.	160KHz	160KHz	L202 (OSC) and L001 (ANT) against the lead line side	Maximum reading on AC VTVM.
2		330KHz	330KHz	CT7 (OSC) and CT6 (ANT)	

Power Amplifier Bias Adjustment

Instruments: DC milli-voltmeter

Notes: Prior to Bias Adjustment, run about 5 minutes with rated output (8 ohm) and warm up Power Transistor and Heat Sink.
Set Volume Control to Minimum.

Step	Coupling		Adjust	Adjust for
	Plus Lead	Minus Lead		
1	TP2	TP1	VR601	DC milli-voltmeter reads 4.4mV.
2	TP3	TP4	VR602	

FM IF and RF Alignment/ Tuning and Signal Indicator Calibration

Instruments: FM Signal Generator (400Hz, 100% Modulated), H.D. Analyzer, Oscilloscope, AC VTUM and Tuning Meter.

Step	Generator		Tuning Dial setting	Adjust	Adjust for
	Coupling	Frequency			
1	Antenna terminal	90MHz	90MHz	L107 (OSC)	Maximum reading on AC VTUM.
2		106MHz	106MHz	CT3 (OSC)	
3	Repeat steps 1 and 2 unit no further improvement is noticed.				
4	Antenna terminal	90MHz	90MHz	L101, L102, L103 and L104(RF)	Maximum reading on AC VTUM.
5		106MHz	106MHz	CT1 (ANT) and CT2 (RF)	
6		98MHz	98MHz	L106 (OSC)	
7	Repeat steps 4 and 5 unit no further improvement is noticed.				
8	Antenna terminal (1mV Input)	98MHz	98MHz	L109 (upper core)	Minimum reading on H.D. Analyzer.
9			No interfering	L109 (low core)	Tuning Meter to "Center" position.
10			98MHz	VR101	5 LEDs just light up. (Signal strength indicator)

FM MPX Alignment

Instruments: FM Stereo Generator, AC VTVM and Oscilloscope.

Step	Generator		Tuning Dial setting	Adjust	Adjust for
	Coupling	Frequency			
1	Antenna terminal	98MHz Pilot.....10% 1KHz.....90% Mod.	98MHz	VR301	Stereo indicator light up.
2				VR302	best separation
3	Check the stereo indicator can be operated normally when pilot signal is reduce from 10% to 6%.				

MW-ZF und HF-Einstellung/ MW-Signalstärkeanzeige-Eichung

Instrumente: MW-Messender (400Hz 30% moduliert), Wechselstrom-Roehrenvoltmeter und Oszillograph.

MW-ZF Einstellung (MW/UKW, MW/LW/UKW)

Schritt	Messender		Abstimmskalen Einstellung	Abgleich	Abgleich auf
	Anschluss	Frequenz			
1	Steckerstift 12 (auf ZF-leiterplatte ueber 0.01 MF Kondensator)	455KHz	Kine Interfenz am unteren skalenende	L204, L205 und L206 (auf ZF-Leiterplatte)	Maximalanzige am Roehrenvoltmeter

MW-HF Einstellung (MW/UKW, MW/LW/UKW)

Schritt	Messender		Abstimmskalen Einstellung	Abgleich	Abgleich auf
	Anschluss	Frequenz			
1	Mess-Signal mit Schleife in Ferrit antenna einspeisen.	600KHz	600KHz	L201 (OSZ) und L001 (ANT) Lotleine-Seite	Maximalanzeige am Roehrenvoltmeter
2		1400KHz	1400KHz	CT5 (OSZ) und CT4 (ANT)	
3	(Antennenklennenspannung 1mV)	1000KHz	1000KHz	VR201	fünf LEDS leuhtet recht auf. (Signalstärkeanzeige)

LW-HF Einstellung (MW/LW/UKW nur)

Schritt	Messender		Abstimmskalen Einstellung	Abgleich	Abgleich auf
	Anschluss	Frequenz			
1	Mess-Signal mit Schleife in Ferrit antenna einspeisen	160KHz	160KHz	L202 (OSZ) und L001 (ANT) gegen Lotleine-Seite	Maximalanzeige am Roehrenvoltmeter
2		330KHz	330KHz	CT7 (OSZ) und CT6 (ANT)	

Endverstärker-Vorspannung-Einstellung

Instruments: DC-Gleichstrom-millivoltmeter

Anmerkung: Vor Einstellung der Vorspannung ist das Graet stwa 5 minuten mit nennleistung unter 8 ohm belastung zu betreiben, um die Leistung-stransistoren und Kuehlbleche warm werden zu lassen.
Lautstärkerregeler Volumenkontrolle auf Minimum stellen.

Schritt	Anschluss		Abgleich	Abgleich auf
	Pruefstift	Minuspol		
1	TP2	TP1	VR601	DC-Gleichstrom-millivoltmeter auf 4.4mV einstellen.
2	TP3	TP4	VR602	

UKW-ZF und HF-Einstellung/ Signalstärkeanzeige-Eichung

Instrumente: UKW-Messender (400Hz 100% Moduliert), Klirrfaktormesser, Oszillograph, Wechselstrom-Roehrenvoltmeter

Schritt	Messender		Abstimmskalen Einstellung	Abgleich	Abgleich auf
	Anschluss	Frequenz			
1	Antennenklemmen anschliessen	90MHz	90MHz	L107 (OSZ)	Maximalanzeige am Roehrenvoltmeter
2		106MHz	106MHz	CT3 (OSZ)	
3	Schritt 1 und 2 weiderholen, bis kein weitere Verbesserung eintritt.				
4	Antennenklemmen anschliessen	90MHz	90MHz	L101, L102, L103 and L104 (HF)	Maximalanzeige am Roehrenvoltmeter
5		106MHz	106MHz	CT1 (ANT) and CT2 (HF)	
6		98MHz	98MHz	L106 (OSZ)	
7	Schritt 4 und 5 weiderholen, bis kein weitere Verbesserung eintritt.				
8	Antennenklemmen anschliessen (Antennenklemmen enspannung 1mV	98MHz	98MHz	L109 (upper core)	Minimalanzeige am Klirrfaktormesser
9			KEINE Interferenz	L109 (low core)	Abstimmanzeiger auf "center" stellen.
10			98MHz	VR101	fünf LEDS leuhtet recht auf. (Signalstärkeanzeige)

UKW MPX-Einstellung

Instrumente: UKW-stereo Messender, Roehrenvoltmeter und Oszillograph.

Schritt	Messender		Abstimmskalen Einstellung	Abgleich	Abgleich auf
	Anschluss	Frequenz			
1	Antennenklemmen anschliessen	98MHz Pilotton.....10% 1KHz..... 90% Moduliert.	98MHz	VR301	Stereoanzeige leuchtet auf.
2				VR302	beste Trennung
3	Einwandfreier Stereoanzeigebetrieb muss auch noch gewahrleistet sein, wenn der Stereopilotton von 10% auf 6% reduziert wird.				

Alignement AM IF et HF/ Indicateur de nivea de signal

Instruments: Générateur de signal AM (400Hz 30! modulé) AC VTVM et Oscilloscope.

ALIGNEMENT AM IF (AM/FM, MW/LW/FM)

Point	Générateur		Ecran d'accord	Réglage	Réglage pour
	Couplage	Fréquence			
1	Brouche No. 12 (Sur IF plaquette par l'intermédiaire dún condensateur de 0.01 mfd.	455KHz	Non interférence a l'extrémité de l'échelle	L204, L205 et L206 (sur la plaquette IF)	Lecture maximum sur le voltmètre électronique AC VTVM.

Alignement MW RF (AM/FM, MW/LW/FM)

Point	Générateur		Ecran d'accord	Réglage	Réglage pour
	Couplage	Fréquence			
1	Boucle de mesure Envoyée le signal sur ferrite à boucle	600KHz	600KHz	L201 (OSC) et L001 (ANT) Côté de ligne de connexion	Lecture maximum sur AC VTVM.
2		1400KHz	1400KHz	CT5 (OSC) et CT4 (ANT)	
3	(absorbé 100mV)	1000KHz	1000KHz	VR201	5 LEDS allument seulement. (Indicateur de force du signal)

Alignement LW RF (MW/LW/FM senlement)

Point	Générateur		Ecran d'accord	Réglage	Réglage pour
	Couplage	Fréquence			
1	Boucle de mesure Envoyée le signal sur ferribe à boucle	160KHz	160KHz	L202 (OSC) et L001 (ANT) contre le côté de ligne de connexion	Lecture maximum sur AC VTVM.
2		330KHz	330KHz	CT7 (OSC) et CT6 (ANT)	

Régtage de la potarisation de l'amplificateur de puissance

Instrument: DCmilli-voltmètre

Note: Avant le réglage de la polarisation, passer à peu près 5 minutes avec une proportion de la sortie du courant (8 ohm) et rèchauffer le transistor de puissance et le snk.
Mettre le contrôle de l'étendue au minimum.

Point	Couplage		Réglage	Réglage pour
	Positif	Moins		
1	TP2	TP1	VR601	DC-millivoltmeter lit 4.4mV.
2	TP3	TP4	VR602	

Alignement FM IF et HF/ Indicateur de force du signal

Instruments: (400Hz, 100% modulé) Analyseur H.D., Oscilloscope, AC VTVM et Compteur de syntonisation.

Point	Générateur		Ecran d'accord	Réglage	Réglage pour
	Couplage	Fréquence			
1	Borne d'antenne	90MHz	90MHz	L107 (OSC)	Lecture maximum
2		106MHz	106MHz	CT3 (OSC)	sur AC VTVA
3	Répéter les points 1 et 2 jusqu'ancun perfectionnement est marqué.				
4	Borne d'antenne	90MHz	90MHz	L101, L102, L103 et L104 (RF)	Lecture maximum sur AC VTVM.
5		106MHz	106MHz	CT1 (ANT) et CT2 (RF)	
6		98MHz	98MHz	L106 (OSC)	
7	Répéter les points 4 et 5 jusqu'avcun perfectionnement est marqui				
8	Borne d'antenne (1mV absorbée)	98MHz	98MHz	L109 (Nogan bas)	Lecture maximum sur AC VTVM.
9			non interférence	L109 (Nogan bas)	Lecture de syntonisation à la position "centrole"
10			98MHz	VR101	5 LEDS allument seulement (Indicateur de force du signal)

Alignement FM MPX

Instruments: FM stéréo Générateur, AC VTVM et Oscilloscope.

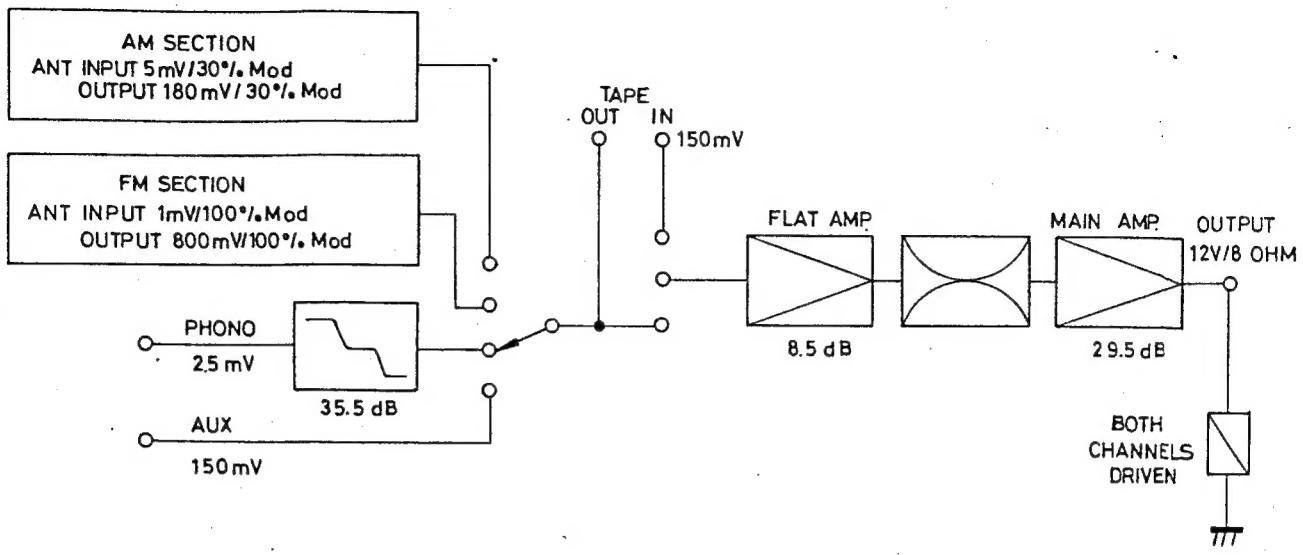
Point	Générateur		Ecran d'accord	Réglage	Réglage pour
	Couplage	Fréquence			
1	Borne d'antenne	98MHz lampe témoin 10% 1 KHz 90! Mod.	98MHz	VR301	Indicateur stéréo allume
2				VR302	Séparation la plus meilleure
3	Eraminer l'indicateur stéréo peut être opéré normalement lorsque le signal de lampe témoin est véduite de 10% à 6%				

oair Parts List/Reparaturteilliste/
te des pièces de rechange

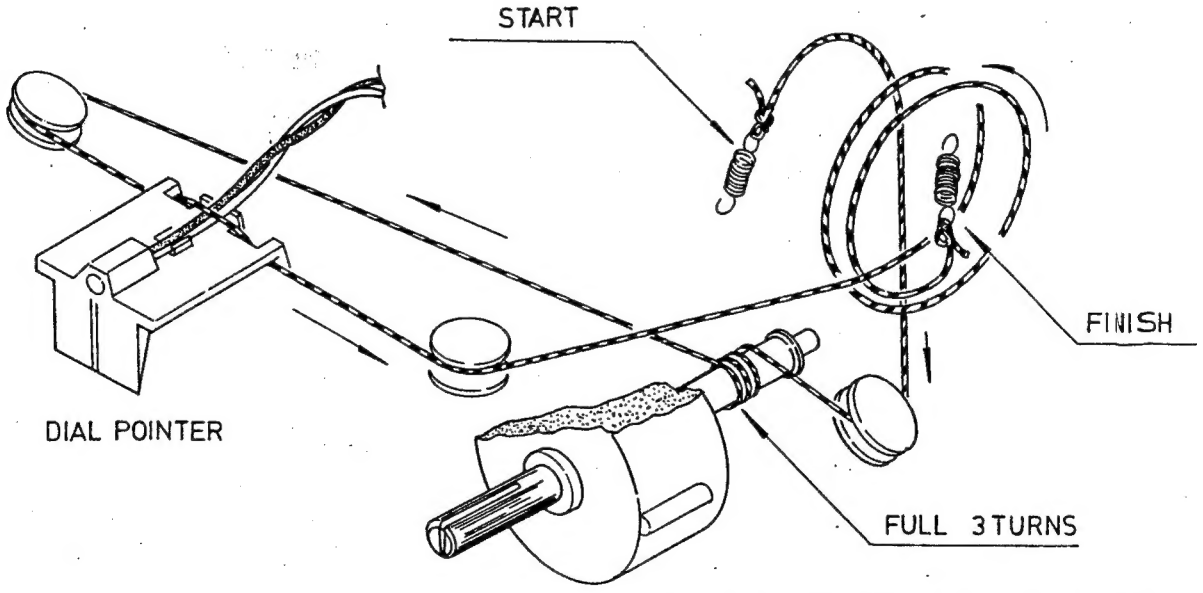
atic on	Parts No.	Description
ISISTORS, DIODES AND IC'S		
	302001112	2SK49 (F,H), FM RF Amp.
104	301201163	2SC1674 (K,L), FM MIX OSC
	301201117	2SC829 (C), FM IF Amp.
	301201117	2SC829 (C), MW OSC
	301201117	2SC829 (C), LW OSC (MW/LW/FM only)
204	301201117	2SC829 (C), Audio Amp.
302	301201115	2SC828 (R), for Switching, VOC stop Control
304	301201134	2SC1327 (S,T), Audio Amp.
502	301201134	2SC1327 (S,T), Flat Amp.
504	301001145	2SA921 (S), Differential Amp.
506	301201155	2SC1318 (R,S). Pre-Driver
508	301301134	2SD571 (K,L), Idling 8365036
510	301201132	2SC1384 (R,S), Driver
512	301001140	2SA684 (R), Driver 8350059
516	301201169	2SC1826 (O,Y), Power Amp. 8260067
	301201150	2SC1567 (R,S), Stabilizer 8260081
102	300111008	1K188, FM AGC Detector
104	300111018	1S2472, for Switching Rectifier
205	300111008	1K188, AM AGC, POP Pro. Rectifier
	300111018	1S2472, DC Balance Regulator
306	300414042	LN224RP, Signal Ind.
	300313019	WZ-350, Zener Regulator, 35V ½W
903	300919026	IN4003, Rectifier
	300919027	KBP-02, Rectifier 8310027
	300313017	WZ-162, Zener Regulator, 16V ½W
	303452251	HA11225, IF Amp.
	303452250	HA12003, MPX Decorder
,402	303452164	uPC1024H, Phono Amp.
	303452188	LB1405, Signal Ind. Driver

Schematic Location	Parts No.	Description
COILS AND VARIABLE RESISTORS		
L001	222391156	AM ANT Coil (AM/FM)
	222391158	MW/LW ANT Coil (MW/LW/FM)
L101	226501131	FM ANT Coil
L102-104	226501132	FM RF Coil
L105	226501143	2.2uH, FM IF Trap Coil
L106	225501142	FM IFT
L107	226501161	FM OSC Coil
L108	226501125	18uH, Moving Phase
L109	225501139	FM IFT Quadrature Detector
L201	223301127	MW OSC
L202	223301129	LW OSC (MW/LW/FM only)
L203	226501142	2mH, LW Filter (MW/LW/FM only)
L204	225301131	AM IFT 1st.
L205	225301132	AM IFT 2nd.
L206	225301133	AM IFT 3rd.
L901,902	226501127	470uH, Chock Coil
VR101	510502196	100KB, FM Signal Ind. Adj.
VR201	510502200	50KB, AM Signal Ind. Adj.
VR301	510502195	10KB, VCO Adj.
VR302	510502199	20KB, Separation Adj.
VR501	515121131	250KW, Balance Control
VR502	525121146	100KBx2, Volume Control
VR503,504	525101173	100KCx2, Treble Bass Control
VR601,602	510502198	1KB, Bias Adj.
SWITCHES AND OTHERS		
S1	601011308	Switch, Function Selector (AM/FM)
	601011303	Switch, Function Selector (MW/LW/FM)
S2,3 (1 Set)	614020450	Switch, Push 2-Key, Tape Monitor/Loudness
S4,5 (1 Set)	614020449	Switch, Push 2-Key, Speaker A/B
S6	614010139	Switch, Power Supply (for UL, CSA)
	614010138	Switch, Power Supply (for BEAB...)
T001	207001523	Transformer, Power Supply (Multi-type) ⚠
C901,902	422470425	Smoothing Capacitor
F001,002	341221250	Fuse, 2.5A, Speaker Protector (Long Size)
	345222250	Fuse, 2.5A, Speaker Protector (Mini Size)
	345252250	Fuse, 2.5A. Speaker Protector (Mini Size SD mark)
F003,004	341221300	Fuse, 3A, Inside Speaker Protector (CSA only)
F901,902	341221400	Fuse, 4A, AC Circuit Protector (Long Size)
	345222400	Fuse, 4A, AC Circuit Protector (Mini Size)
	345252400	Fuse, 4A, AC Circuit Protector (Mini Size "S" "D" mark)

Gain Diagram/Verstärkungsdiagramm/ Diagrammede gain



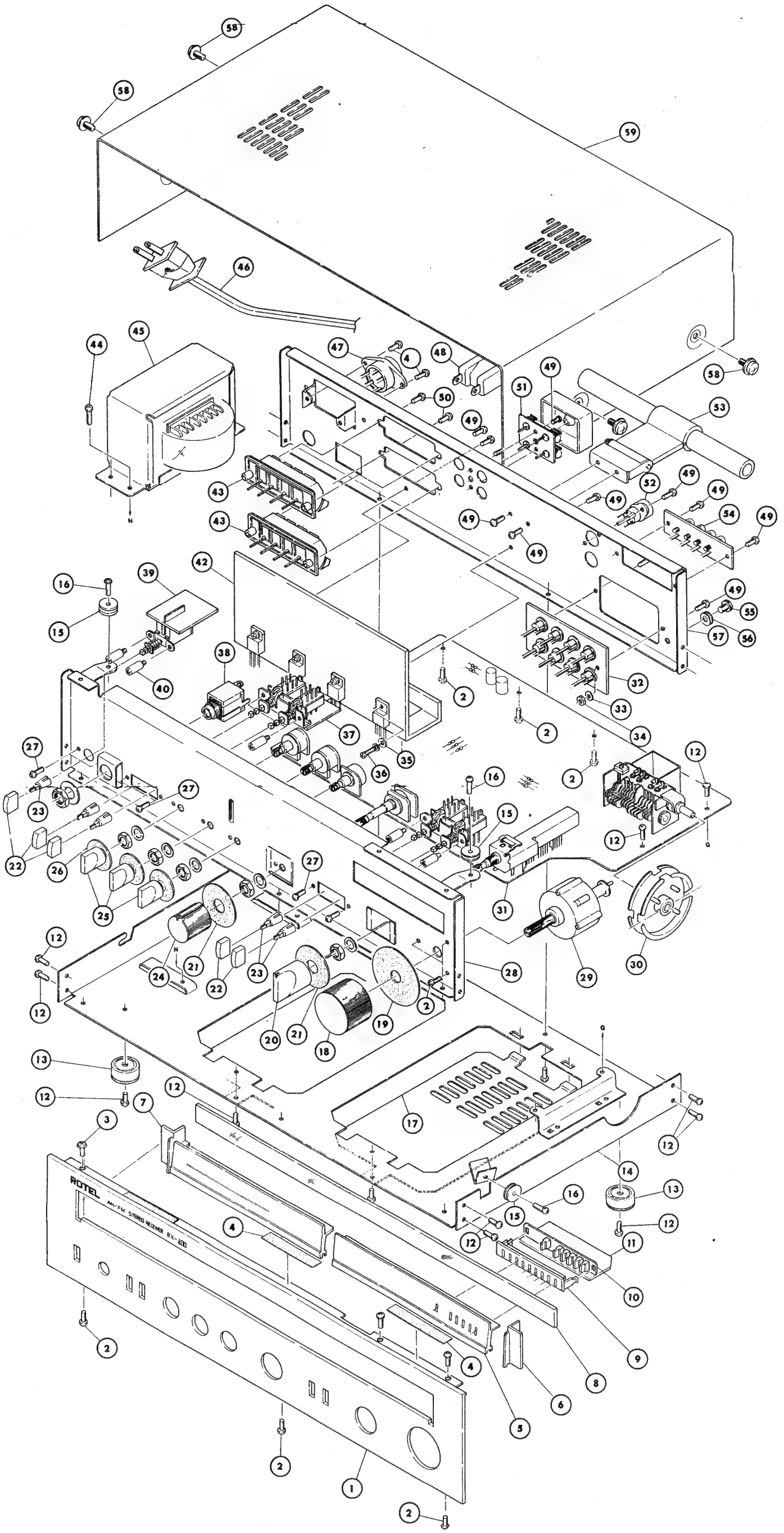
Dial Stringing Diagram
Skalenantriebsschema
Diagramme des câble d'entraînement



Note: Carry out stringing with the front end set at VC maximum.

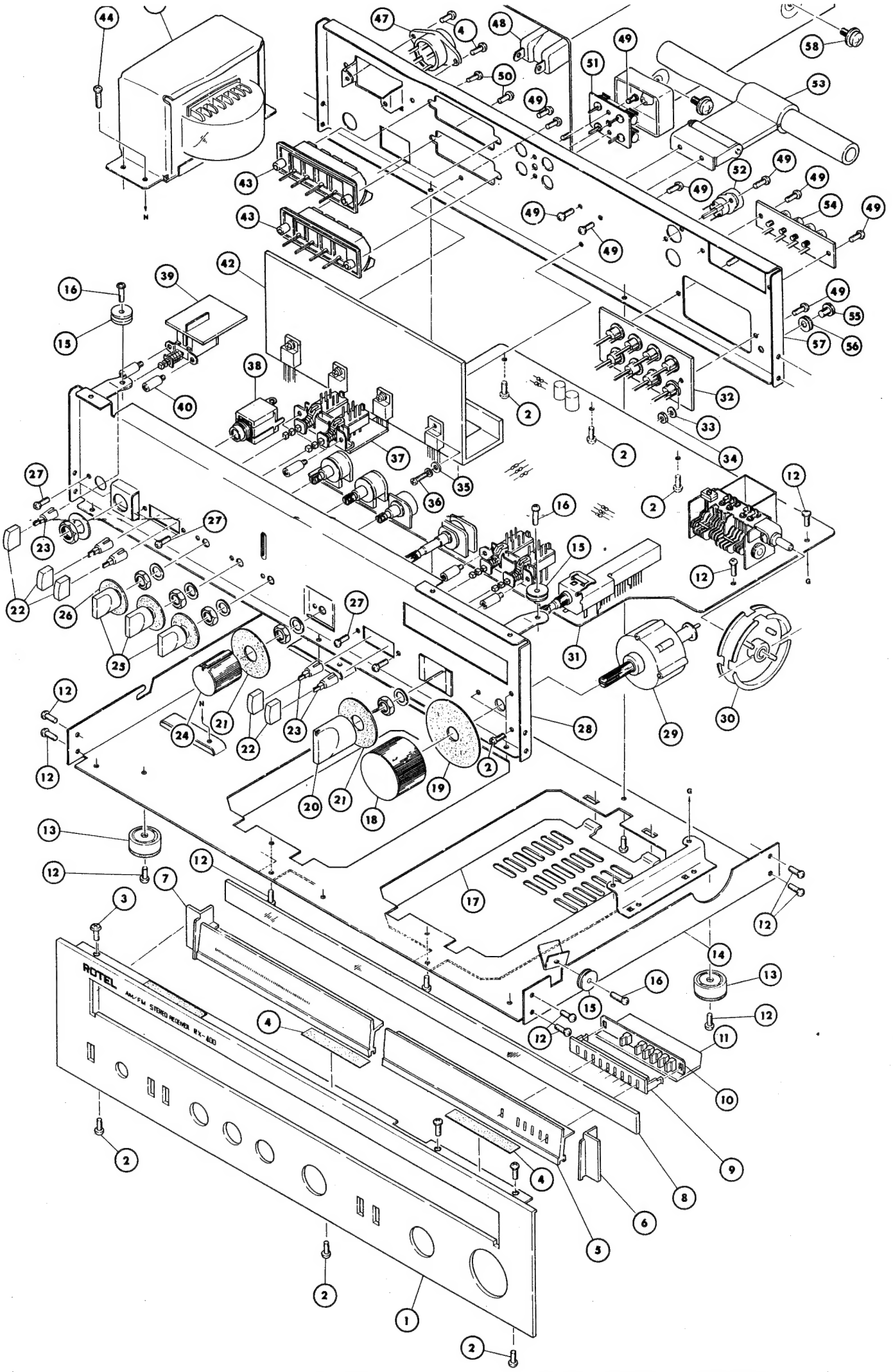
Zur Beachtung: Antriebsseil mit dem Drehko der Eingangs-Stufe in Maximumstellung verlegen.

Note: Effectuer le câblage avec le condensateur réglable de l'éntrge réglé au maximum.



Key No.	Parts No.	Description
1	111911556	Front Panel Ass'y (AM/FM)
2	111911557	Front Panel Ass'y (MW/LW/FM)
2	701203006	Screw, +M3x6 SMF
3	726203006	Screw, +M3x6 MC
4	990201134	Felt. Front Panel
27	703213006	Screw, +M3x6 Pan
28	122011430	Front Chassis Ass'y
29	654911300	Tuning Shaft
30	651300015	Pulley, Dial AM/FM/MPX/Tone/Main Amp.
42	127012261	Heat Sinking
43	642400114	Terminal, Push 4P, Speaker A/B
44	713214008	Screw, +M4x8 W/SP Ni
45	207001523	Transformer, Power Supply (Multi-Type)

Illustration des Auseinanderbaus/Schéma de démontage

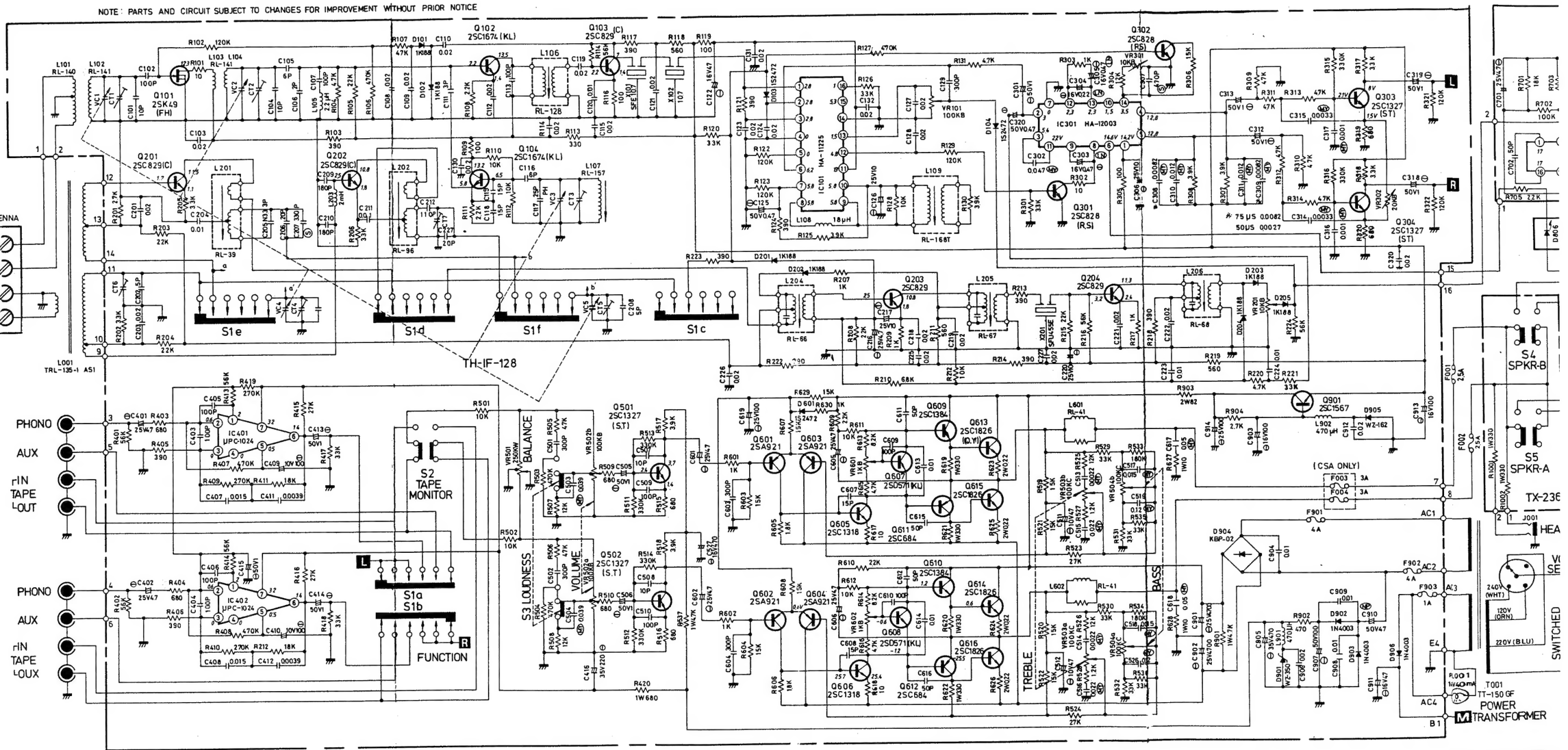


Key No.	Parts No.	Description
1	111911556	Front Panel Ass'y (AM/FM)
2	111911557	Front Panel Ass'y (MW/LW/FM)
2	701203006	Screw, +M3x6 SMF
3	726203006	Screw, +M3x6 MC
4	990201134	Felt, Front Panel
5	112011394	Dial Board (AM/FM)
	112011395	Dial Board (MW/LW/FM)
6	114902359	Holder, Dial Board (R)
7	114902358	Holder, Dial Board (L)
8	114902360	Dial Window
9	114902322	Holder, Signal Ind.
10	141811180	Signal Ind. PCB Ass'y
11	141811179	Signal Ind. Driver PCB Ass'y
12	726203006	Screw, +M3x6 BTV MC
13	673402055	Plastic Foot
14	121011362	Chassis Body
15	651110019	Pulley
16	770911264	Screw, Pulley
17	120013021	Bottom Mask
18	116310307	Knob, 33¢, Tuning
19	990201330	Felt, Knob (33¢)
20	116310335	Knob, 22¢, Function
21	990201329	Felt, Knob (20¢)
22	116210073	Push Button, Bass . . . etc.
23	114902356	Connector, Push Button
24	116310339	Knob, 20¢, Volume
25	116310304	Knob, 13¢, Bass . . . etc.
26	990201328	Felt, Knob (13¢)

Key No.	Parts No.	Description
27	703213006	Screw, +M3x6 Pan
28	122011430	Front Chassis Ass'y
29	654911300	Tuning Shaft
30	651300015	Pulley, Dial
		AM/FM/MPX/Tone/Main Amp. PCB Ass'y
31	141010198	AM/FM, 75uS, Long Fuse
	141010199	AM/FM, 75uS, Long Fuse (for UL, CSA)
	141010200	AM/FM, 50uS, Mini Fuse (for Europe)
	141010201	AM/FM, 50uS, "S" "D" mark (for BEAB)
	141010202	MW/LW/FM, 50uS, Mini Fuse
	141010203	MW/LWM/FM, 50uS, Mini "S" "D" mark (for BEAB)
32	624200208	Terminal, 6P, RCA Type
33	770500014	Washer, 3.2¢, Inner
34	770402201	Nut, M3
35	992001112	Spacer, Insulation
36	770911287	Screw, +M2.6x12 W/SP
37	141811178	Speaker Switch PCB Ass'y
38	626110035	Jack, Headphones
39	141811067	Power Switch PCB Ass'y (for BEAB . . .)
	141811068	Power Switch PCB Ass'y (for UL, CSA)
40	770911263	Cylinder Bush, Inner Screw
41		No used

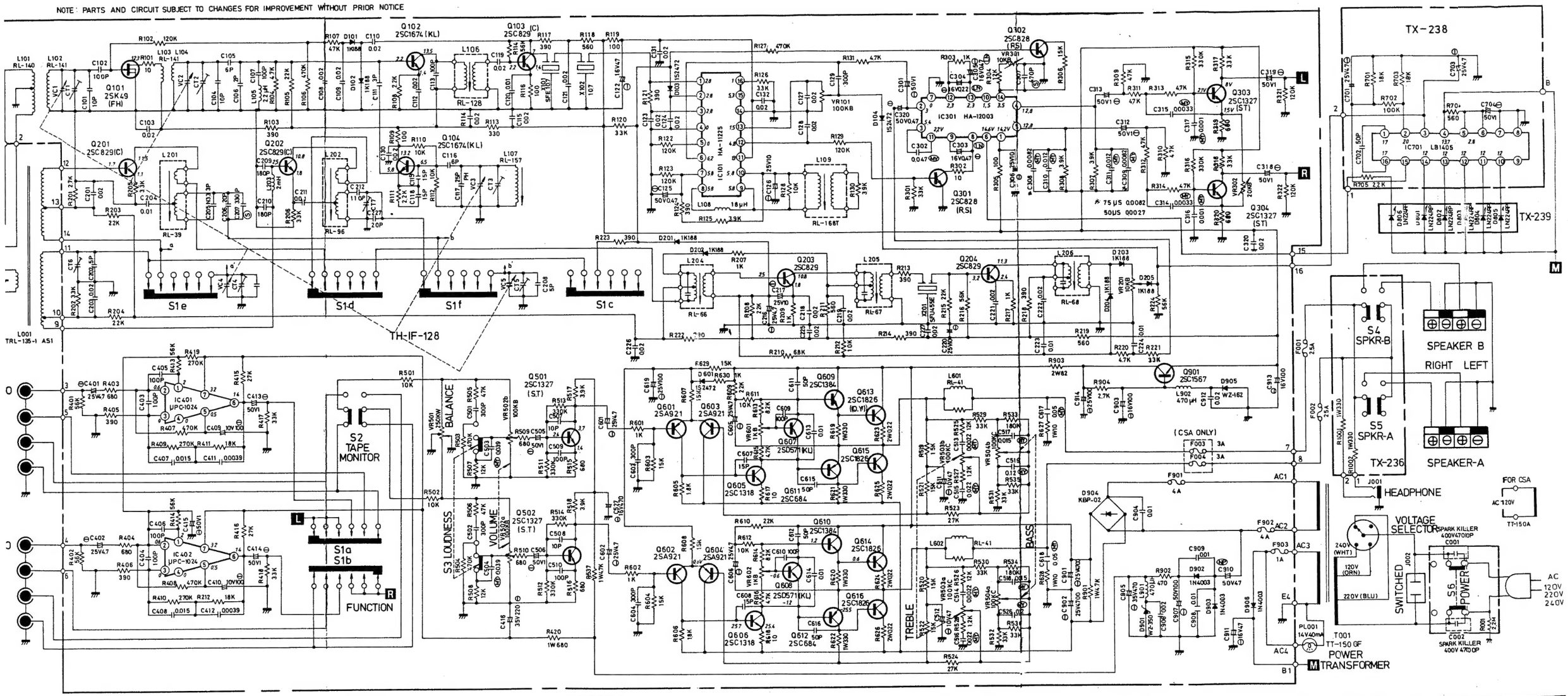
Key No.	Parts No.	Description
42	127012261	Heat Sinking
43	642400114	Terminal, Push 4P, Speaker A/B
44	713214008	Screw, +M4x8 W/SP Ni
45	207001523	Transformer, Power Supply (Multi-Type)
46	796301115	Line Cord
	796301149	Line Cord (for Europe)
	796301125	Line Cord (for Austria)
	796301138	Line Cord (for BEAB)
47	648211247	Voltage Selector
48	648211268	AC Outlet
49	706223006	Screw, +M3x6 BK
50	766223008	Screw, +M3x8 STV BK
51	648211157	Holder, 2P, Fuse (for UL, CSA)
	648211162	Holder, 2P, Fuse (for BEAB)
52	628111166	Coaxle Connector
53	222391156	AM/FM ANT Coil
	222391158	MW/LW ANT Coil
54	649201115	Terminal, Screw, 4P
55	770911126	Screw, GND, -4x8
56	770500004	Washer, 4.5¢x10¢x1t
57	123011500	Rear Chassis Ass'y (for Generator)
	123011562	Rear Chassis Ass'y (for CSA)
58	756224008	Screw, +M4x8 W/SP BK
59	138011319	Upper Cover

Schematic Diagram/Schaltungsschema/Diagramme schématique



ITEM	SCHEMAT LOCATION (L
FM IF AMP	R131 C
MW LW IF AMP	R224 C
FM MPX AMP	R323 C
EQUALIZER	R420 C
TONE CONTROL	R537 C
MAIN AMP	R630 C

matic Diagram/Schaltungsschema/Diagramme schématique



THIS SCHEMATIC DIAGRAM IS AVAILABLE COMBINATION OF MW/LW/FM UNITS ONLY WHEN UNITS COMBINE JUST AM/FM ONLY. THERE WERE MODE SOME MODUFICATIONS AS FOLLWING

1 CHANGED ANTENNA COIL L001 FROM TRL-135-1 TO RL-72B
2 CANCELLED SWITCHES S1e S1f
3 SHORTED a AND a' b AND b'
4 CANCELLED RESISTORS R203 204 AND 206
CAPACITORS C202. 203. 210. 209. 211. 212 AND 227
COILS L203 AND 202 TRANSISTOR Q202
TRIMER CT6 AND CT7

RESISTORS

5% TOLERANCE UNLESS OTHERWISE NOTED
K---KILO OHM
M---MEGA OHM
*---COMPOSITION RESISTORS 1/2 WATT
RSU METAL OXIDE FILM RESISTORS
NON MARK LOW NOISE TYPE CARBON RESISTORS

CAPACITORS

(LN)---LOW NOISE ELECTROLYTIC CAPACITORS
(MY)---MYLAR FILM CAPACITORS
(S)---POLYSTYRENE FILM CAPACITORS
(T)---TANTALUM CAPACITORS
(-)---ELECTROLYTIC CAPACITORS
NON MARK CERAMIC CAPACITORS
UNLESS OTHERWISE NOTED IN SCHEMATIC ALL CAPACITANCE VALUES ARE EXPRESSED

TOP VIEW
HA-11225
LB-1405
1 3 5 7 8

TOP VIEW
HA-12003
1 3 5 7

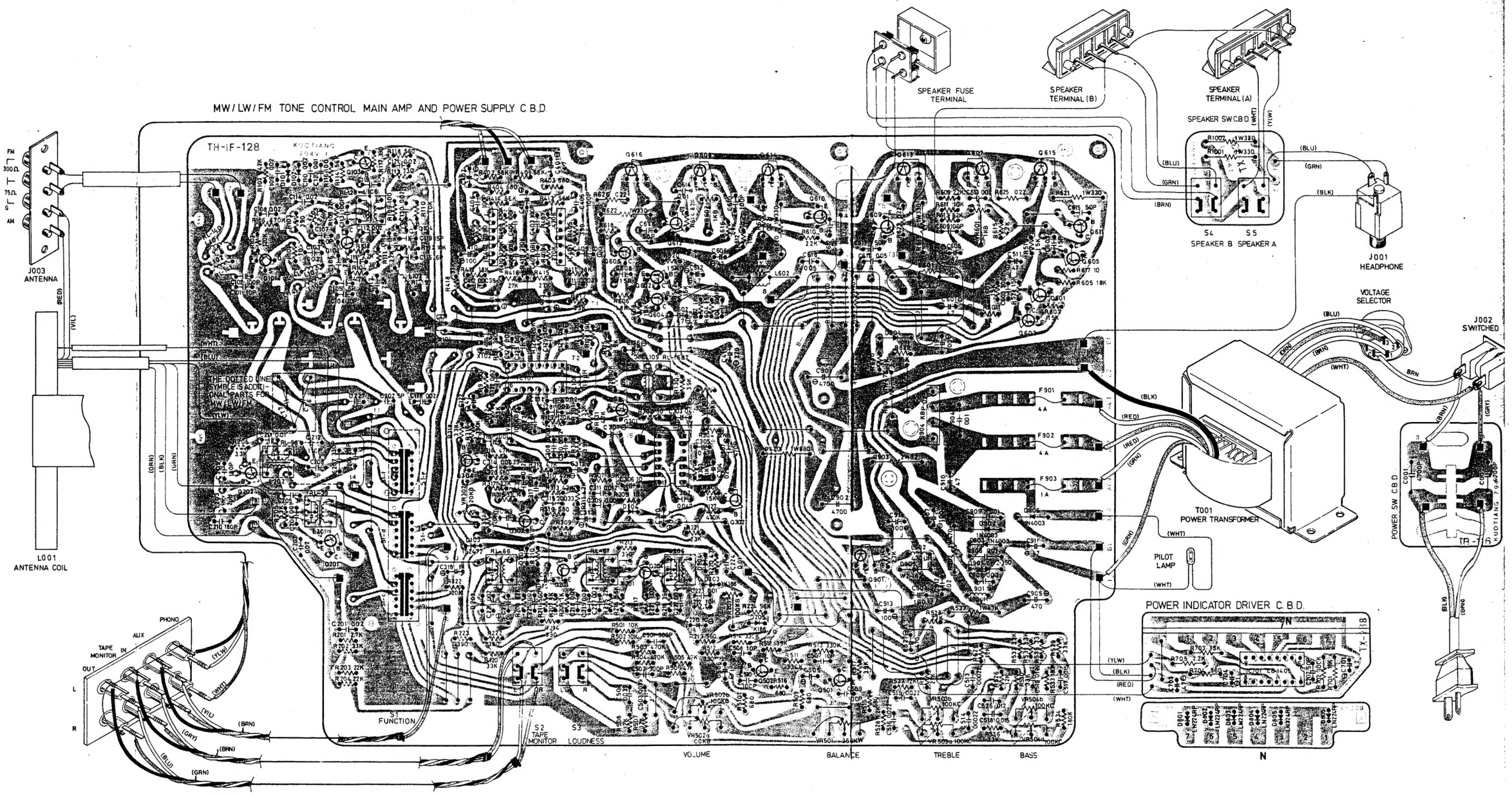
BOTTOM VIEW
2SK49
G S D
E C B

2SC684
2SC1327
2SC828
2SC829
2SC1567
2SC1318
2SC1384
2SA921

SIDE VIEW
2SD571
2SC1826
E C B
B C E

SIDE VIEW
uPC-1024
1 2 3 4 5 6 7

ITEM	SCHEMATIC LOCATION (LOST)	
FM IF AMP	R131	C132
MW LW IF AMP	R224	C227
FM MPX AMP	R323	C320
EQUALIZER	R420	C416
TONE CONTROL	R537	C520
MAIN AMP	R630	C619

ITEM	SCHEMATIC LOCATION LOST	
TUNING DRIVER	R704	C704
POWER SUPPLY	R904	C913
SPKR.SW PCB	R1002	——
CHASSIS	——	C002

Wiring Diagram/Drahtleitung Diagramm/Diagramme de connexion